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(72) Inventor: **Gregoire, Bernard Robert Jr.**
Pocatelo, Idaho 83201 (US)

(74) Representative: **Alton, Andrew**
Urquhart-Dykes & Lord
Tower House
Merrion Way
Leeds LS2 8PA (GB)

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(71) Applicant: **AMI Semiconductor, Inc.**
Pocatello, Idaho 83201 (US)

(54) **Bandgap voltage reference using differential pairs to perform temperature curvature compensation**

(57) A bandgap reference that generates a temperature stable DC voltage by using a corrective current. The corrective current is generated by a series of differential pairs that are controlled by both positive temperature shift gate voltage on one transistor, as well as a negative temperature shift gate voltage on the other transistor. As temperature changes and crosses the crossing point at which the current is split evenly through

both transistors, the current change is more abrupt. The crossing points of each of the differential pairs may be appropriately selected so as to generate a high resolution corrective current. The various current contributions are summed to form the total corrective current, which tends to be quite accurate due to the abrupt crossing points. The corrective current is then fed back into the circuit so as to compensate for much of the temperature error.

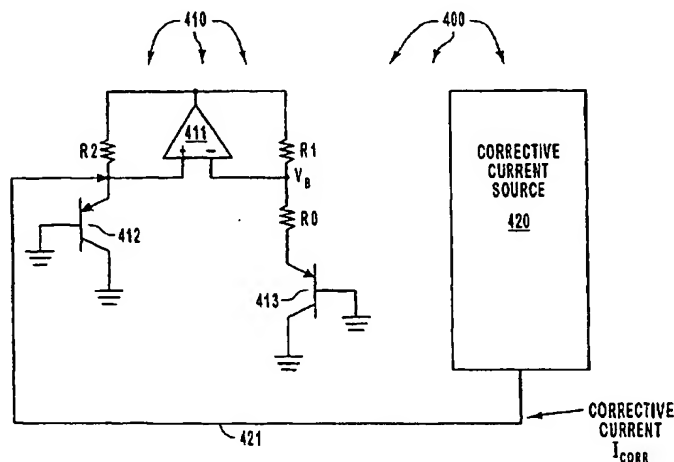


FIG. 4



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EUROPEAN SEARCH REPORT

Application Number
EP 03 25 1630

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
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			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			G05F
The present search report has been drawn up for all claims			
Place of search MUNICH		Date of completion of the search 3 November 2003	Examiner Sundin, M
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document</p>			

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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 03 25 1630

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

03-11-2003

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82